

REMARKS:

Claim 7 was previously canceled and so Claims 1-6 and 8-15 are currently under consideration. Claims 2, 10 and 12 have been canceled in the present amendment. Claims 1-5, 8-12 and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,451,202 to Kuennen et al. ("Kuennen") in view of U.S. Patent No. 3,894,236 to Hazelrigg ("Hazelrigg").

As a preliminary matter, the independent claims have been amended to better define the novel features of the present invention. All of the claims now include the requirement of the UV lamp being vertical with filaments being positioned in an upper end thereof and a heat sink being in contact with a lower end thereof.

The present invention is directed to an apparatus for disinfecting water and is designed to operate at the highest and most constant germicidal UV emitting efficiency. To this end, the present device has UV emitting lamps mounted vertically with filaments at the top where temperature is the highest. The lamp lower end is provided in contact with heat sinks at the bottom of the reaction chamber where the temperature is the lowest. Due to the type of lamps used (see paragraph 28) the filaments are located at the top of the lamp and are not cooled. Additionally, condensed mercury will deposit in the furthest place from the filaments, i.e., the bottom of the lamp. These features, which result in a significant advantage over the prior art, have been set out in the amended claims presented herein.

In contrast, Kuennen shows a lamp in a significantly different configuration as that presently claimed with significant disadvantages alluded to above. As pointed out in the Action, Kuennen lacks other features of the presently claimed invention. Hazelrigg fails to provide all the deficiencies of Kuennen and fails to provide a motivation or suggestion to modify Kuennen to arrive at the presently claimed invention.

There is a significant difference between the device shown in Kuennen and that shown in Hazelrigg. In particular, the device of Kuennen includes UV lamps and water conduits arranged in a central but spaced apart configuration. Reflectors are placed in a spaced apart configuration surrounding the water conduits and UV lamps. Any cooling in

such an arrangement would occur by convection since none of the parts are in contact except for rings positioned on the upper end of the UV lamps. In stark contrast, the device of Hazelrigg includes a central, horizontal UV lamp which is surrounded by and in contact with a water jacket. Heat from the lamp would travel by conduction through the jacket and into the water of the jacket. Surrounding the water jacket and in intimate contact with the water jacket is a reflector. So, heat from the water and water jacket would also be conducted to the reflector. One embodiment of the reflector includes cooling fins for managing heat conducted thereto. Therefore, heat buildup in the two devices is managed in significantly different ways because of their differing construction and neither device could employ the heat management technique of the other because of their extremely different designs. It is therefore suggested that one with ordinary skill in the art would not look to Hazelrigg to modify Kuennen. In view of this analysis, it is suggested that combining these aspects of the two references is a classic hindsight construction.

Since Kuennen does not show the above-discussed elements and Hazelrigg does not supply teaching or suggestion to provide the deficiencies thereof, the present claims should be allowed. Reconsideration and a Notice of Allowability are solicited of Claims 1, 3-6, 8, 9, 11, and 13-15.

Respectfully submitted,


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June 9, 2005
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